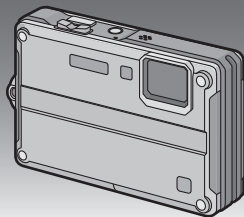


Panasonic®

Basic Operating Instructions Digital Camera

Model No. **DMC-TS2**

LUMIX



Before connecting, operating or adjusting this product,
please read the instructions completely.



**Please also refer to Operating
Instructions (PDF format)
recorded on the CD-ROM
containing the Operating Instructions
(supplied).**



You can learn about advanced operation methods
and check the Troubleshooting.

For USA and Puerto Rico assistance, please call: 1-800-211-PANA(7262) or,
contact us via the web at: <http://www.panasonic.com/contactinfo>

Please be sure to read “(Important) About the Waterproof/Dustproof and Anti-shock Performance of the Camera” (P8) and “Maintenance and Waterproof Performance” (P10) before using this unit underwater to prevent the unit from being mishandled, which may cause water to seep in.

Dear Customer,

Thank you for choosing Panasonic!

You have purchased one of the most sophisticated and reliable products on the market today. Used properly, we're sure it will bring you and your family years of enjoyment. Please take time to fill in the information below. The Serial Number is on the tag located on the underside of your Camera. Be sure to **retain this manual** as your convenient Camera information source. Please note that the actual controls and components, menu items, etc. of your Digital Camera may look somewhat different from those shown in the illustrations in these Operating Instructions.

Carefully observe copyright laws.

- Recording of pre-recorded tapes or discs or other published or broadcast material for purposes other than your own private use may infringe copyright laws. Even for the purpose of private use, recording of certain material may be restricted.

Model No. _____

Serial No. _____



A lithium ion battery that is recyclable powers the product you have purchased. Please call 1-800-8-BATTERY for information on how to recycle this battery.

Information for Your Safety

WARNING:

TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK OR PRODUCT DAMAGE,

- **DO NOT EXPOSE THIS APPARATUS TO RAIN, MOISTURE, DRIPPING OR SPLASHING AND THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHALL BE PLACED ON THE APPARATUS.**
- **USE ONLY THE RECOMMENDED ACCESSORIES.**
- **DO NOT REMOVE THE COVER (OR BACK); THERE ARE NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**

THE SOCKET OUTLET SHALL BE INSTALLED NEAR THE EQUIPMENT AND SHALL BE EASILY ACCESSIBLE.

Product Identification Marking is located on the bottom of units.

FCC Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: To assure continued compliance, follow the attached installation instructions and use only shielded interface cables with ferrite core when connecting to computer or peripheral devices.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Declaration of Conformity

Trade Name: Panasonic

Model No.: DMC-TS2

Responsible party: Panasonic Corporation of North America One
Panasonic Way, Secaucus, NJ 07094

Support Contact: Panasonic Consumer Electronics Company
1-800-211-PANA (7262)

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

■ About the battery pack

CAUTION

Battery pack (Lithium ion battery pack)

- Use the specified unit to recharge the battery pack.
- Do not use the battery pack with equipment other than the specified unit.
- Do not get dirt, sand, liquids, or other foreign matter on the terminals.
- Do not touch the plug terminals (+ and –) with metal objects.
- Do not disassemble, remodel, heat or throw into fire.

If any electrolyte should come into contact with your hands or clothes, wash it off thoroughly with water.

If any electrolyte should come into contact with your eyes, never rub the eyes. Rinse eyes thoroughly with water, and then consult a doctor.

CAUTION

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

- Do not heat or expose to flame.
- Do not leave the battery(ies) in an automobile exposed to direct sunlight for a long period of time with doors and windows closed.

Warning

Risk of fire, explosion and burns. Do not disassemble, heat above 60 °C (140 °F) or incinerate.

■ About the battery charger

CAUTION!

DO NOT INSTALL OR PLACE THIS UNIT IN A BOOKCASE, BUILT-IN CABINET OR IN ANOTHER CONFINED SPACE. ENSURE THE UNIT IS WELL VENTILATED. TO PREVENT RISK OF ELECTRIC SHOCK OR FIRE HAZARD DUE TO OVERHEATING, ENSURE THAT CURTAINS AND ANY OTHER MATERIALS DO NOT OBSTRUCT THE VENTILATION VENTS.

Battery charger

This battery charger operates on AC between 110 V and 240 V.

But

- In the U.S.A. and Canada, the battery charger must be connected to a 120 V AC power supply only.
- When connecting to an AC supply outside of the U.S.A. or Canada, use a plug adaptor to suit the AC outlet configuration.

■ Cautions for Use

- Always use a genuine Panasonic AC adaptor (DMW-AC5PP; optional).
- Always use a genuine Panasonic multi conversion adaptor (DMW-MCA1; optional).
- Do not use any other AV cables except the supplied one.
- Do not use any other cables except a genuine Panasonic HDMI mini cable (RP-CDHM15, RP-CDHM30; optional).
Part numbers: RP-CDHM15 (1.5 m) (5 feet), RP-CDHM30 (3.0 m) (10 feet)
- Do not use any other USB connection cables except the supplied one.

Keep the camera as far away as possible from electromagnetic equipment (such as microwave ovens, TVs, video games etc.).

- If you use the camera on top of or near a TV, the pictures and sound on the camera may be disrupted by electromagnetic wave radiation.
- Do not use the camera near cell phones because doing so may result in noise adversely affecting the pictures and sound.
- Recorded data may be damaged, or pictures may be distorted, by strong magnetic fields created by speakers or large motors.
- Electromagnetic wave radiation generated by microprocessors may adversely affect the camera, disturbing the pictures and sound.
- If the camera is adversely affected by electromagnetic equipment and stops functioning properly, turn the camera off and remove the battery or disconnect AC adaptor (DMW-AC5PP; optional). Then reinsert the battery or reconnect AC adaptor and turn the camera on.

Do not use the camera near radio transmitters or high-voltage lines.

- If you record near radio transmitters or high-voltage lines, the recorded pictures and sound may be adversely affected.

-If you see this symbol-

Information on Disposal in other Countries outside the European Union

This symbol is only valid in the European Union.

If you wish to discard this product, please contact your local authorities or dealer and ask for the correct method of disposal.



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(Important) About the Waterproof/ Dustproof and Anti-shock Performance of the Camera

- Please observe the following precautions, and avoid using this camera in any situation where the camera is subject to high water pressure. This camera's waterproof/dustproof rating complies with the "IPX8" and "IP6X" ratings. Provided the care and maintenance guidelines described in this document are strictly followed, this camera can operate underwater, to a depth not exceeding 10 m (33 feet) for a time not exceeding 60 minutes.*1
 - This camera also complies with "MIL-STD 810F (Method 516.5-Shock)". The camera has cleared a drop test from a height of 2 m (6.6 feet) onto 3 cm (0.10 feet) thick plywood. In most cases this camera should not sustain any damage if dropped from a height not exceeding 2 m (6.6 feet).*2
 - Supplied accessories are not waterproof (excluding hand strap/silicon jacket).
- *1 This means that the camera can be used underwater for a specified time in specified pressure in accordance with the handling method established by Panasonic. This does not guarantee no destruction, no malfunction, or waterproofing in all conditions.

*2 This does not guarantee no destruction, no malfunction, or waterproofing in all conditions.

Observe the following precautions and avoid using under water pressure exceeding the guaranteed performance, and in an environment with excessive dust or sand.

Waterproofing is not guaranteed if the unit is subject to an impact as a result of being hit or dropped etc.

If an impact to the camera occurs, it should be inspected (subject to a fee) by a Panasonic Service Center to verify that the waterproofing is still effective. Any malfunction caused by customer misuse, or mishandling will not be covered by the warranty.

Note

- The picture can become whitish if there is dirt e.g. fingerprints on the lens. When it is dirty, lightly wipe the surface of the lens with a soft and dry cloth.

■ Handling of the camera

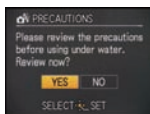
- Do not leave the camera for a long period of time in places where temperature is very low (ski resort etc.) or very high [above 40 °C (104 °F)], inside a car under strong sunlight, close to a heater, on the beach, etc. Waterproof performance may be degraded.
- The inside of this unit is not waterproof. Do not open or close the card/battery door or terminal cover close to the water by the sea, a lake or river, or with wet hands.
- Waterproof function of the camera is for sea water and fresh water only.
- Operation may not be possible when snow or water freezes on the zoom lever, mode dial or camera [OFF/ON] button in cold places like ski resorts etc.

■ About the [PRECAUTIONS] demonstration display

- **Please check beforehand to maintain the waterproof performance.**

[PRECAUTIONS] is displayed when the power is turned on for the first time after purchase, with the card/battery door completely closed.

- The [PRECAUTIONS] screen will not display the next time you turn on the power if you start the slide show by selecting [YES], and then select [END] once it has completed. Select [REPLAY] to see the slide show again.



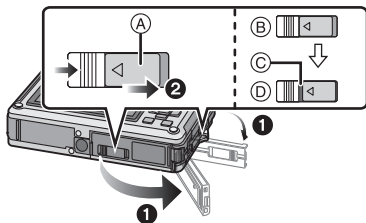
Note

- It will automatically skip to the Clock setting screen if [NO] is selected before the Slide Show starts.
- [PRECAUTIONS] is displayed every time the power is turned on if you exited the slide show using a method other than selecting [END], such as turning off the power while the slide show is playing.
- This can be also confirmed from [PRECAUTIONS] in the [SETUP] menu.

Maintenance and Waterproof Performance

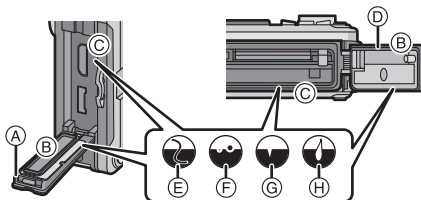
- To prevent water leaking into the camera, observe the following items before using it.
- Check that there is enough remaining battery power or memory in the card.
- Do not open or close the card/battery door or terminal cover in places with sand and dust, or with wet hands.
- At purchase, the [LOCK] switch is in the locked state. When opening the card/battery door and terminal cover, first release the lock.
- Release the lock by sliding the [LOCK] switch in the direction of the arrow until the red area becomes visible, and open the card/battery door and terminal cover.

- (A): [LOCK] switch (gray part)
(B): Locked state
(C): Red part
(D): Released state



- 1** Confirm that there are no foreign objects on inner side of the card/battery door or terminal cover (B) rubber seal and (C) place where rubber seal meets.

- (A): Terminal cover
(B): Rubber seal
(C): Area where rubber seal sits
(D): Card/Battery door
(E): Hair and lint
(F): Sand and dust
(G): Crack and deformation
(H): Fluid



- If there is any crack or deformation in the rubber seal inside the card/battery door and terminal cover, get the camera inspected or repaired by the dealer or an authorized Panasonic Service Center.

- 2** If there is any foreign object, remove with attached brush.

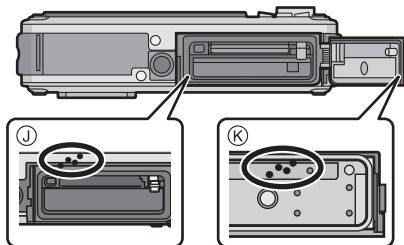


- ①: Brush (supplied)

- If there is any foreign object, such as lint, hair, sand, etc., on the surrounding area, water will leak within a few seconds causing malfunction.

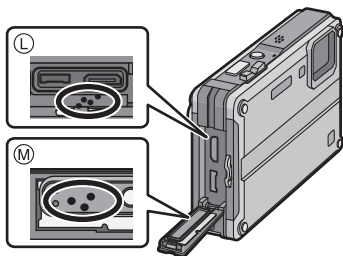
Example of foreign object on the inner side of the card/battery door

- ⓐ: Area where rubber seal sits (around the card/battery compartment)
- ⓑ: Rubber seal site (around the card/battery cover)



Example of foreign object on the inner side of the terminal cover

- ⓒ: Area where rubber seal sits (around the connection terminal)
- ⓓ: Rubber seal site (around the terminal cover)



- Wipe it off with a dry soft cloth if there is any liquid.
- The integrity of the rubber seals may decrease after about 1 year, with use and age. To avoid permanently damaging the camera the seals should be replaced once each year. Please contact Panasonic Service Center for related costs and other information.

3

①: With the [LOCK] switch released, close the card/battery door and terminal cover by pushing until you hear a click.

- To prevent water seeping into the camera, be careful not to trap foreign objects such as liquids, sand, hair or dust etc.
- Closing the door with the [LOCK] switch in the locked state may result in damage or leaks.

②: Slide the [LOCK] switch in the direction of the arrow until the visible red area is no longer visible and the switch is locked.

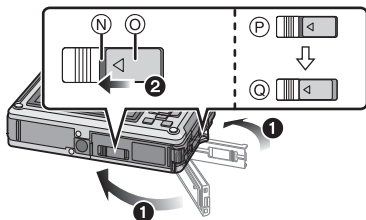
- If you use the camera without securely closing the door and cover, it may open and close of its own accord.

(N): Red area

(O): [LOCK] switch (gray part)

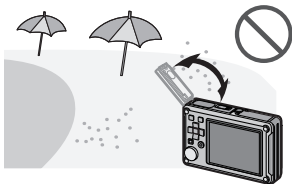
(P): Released state

(Q): Locked state



Note

- If there is any foreign object, remove it with attached brush.
- **Sand and dust etc. will unintentionally adhere to the camera by lodging in between the gap around the card/battery door or terminal cover when used in the following locations:**
 - Where sand is floating, such as in the sea or water etc.
 - Where there is a lot of sand or dust, such as at the beach or in a sand box etc.
- To prevent unintentional opening of the card/battery door and terminal cover, it is recommended to use the supplied silicon jacket.



Using the camera underwater

- Use the camera underwater up to 10 m (33 feet) depth, water temperature from 0 °C to 40 °C (32 °F to 104 °F), and not longer than 60 minutes continuously.
- If there is water or dirt on the camera, use it after wiping it off with a dry soft cloth and have it dry out in a well ventilated area.
- Do not open or close the card/battery door or terminal cover.
- Do not apply shock to the camera underwater. (Waterproof performance may not be maintained, and there is a chance of water leak.)
- Do not dive into the water holding the camera. Do not use the camera at a location where water will splash strongly, such as rapid flow or a waterfall. (Strong water pressure may be applied, and it may cause malfunction.)
- The camera will sink in the water. Take care not to drop the camera and lose it underwater by securely placing the hand strap around your wrist or similar measure.
- Do not use it in hot water over 40 °C (104 °F) (in the bath or hot spring).
- When the camera is splashed with detergent, soap, hot spring, bath additive, sun oil, sun screen, chemical, etc., wipe it off immediately.
- Card and battery are not waterproof. Do not handle with a wet hand. Also, do not insert wet card or battery into the camera.

Causes of water leak

- When the camera is used in the following conditions, a gap may occur between the camera and the card/battery door or terminal cover, causing water to leak and malfunction.
 - When there are foreign objects, such as lint, hair, sand, etc., between the card/battery door or terminal cover and the camera.
 - When the rubber seal has deteriorated.
 - When the [LOCK] switch is not closed on the card/battery door and terminal cover.

Ⓐ: Water will leak through the gap formed remove.

Ⓑ: Water

Ⓒ: Terminal cover

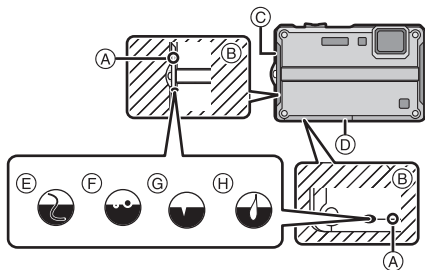
Ⓓ: Card/Battery door

Ⓔ: Hair and lint

Ⓕ: Sand and dust

Ⓖ: Crack and deformation

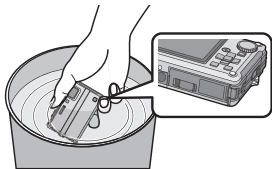
Ⓗ: Fluid



Caring of the camera after using it underwater

- 1 With the card/battery door and terminal cover closed, rinse with water, or if it was used in the sea, soak the unit in fresh water in a shallow container for 10 minutes or less.**

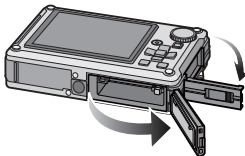
- If you have attached the silicon jacket, be sure to rinse the camera after removing it.
- Leaving the camera with foreign objects or saline matter on it may cause damage, discoloration, corrosion, unusual odour, or deterioration.



- 2 Wipe off the water, and dry the camera by standing it on a dry cloth in a well ventilated shaded area.**

- 3 Confirm there is no water on the camera, and open the card/battery door and terminal cover.**

- 4 Wipe off any water or sand inside the card/battery door and terminal cover with a soft dry cloth.**



■ This unit incorporates a drain design

This unit incorporates a drain design, draining water from gaps in the camera [OFF/ON] button and zoom lever etc. As a result of this, bubbles may come out when you soak the unit in water, but it is not a malfunction.

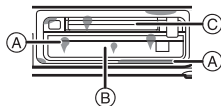


- Example of water droplets around card/battery slot.

(A): Water droplet

(B): Battery

(C): Card



- Water droplets may attach to the card or the battery when the card/battery door is opened without fully drying the camera after it is used underwater or soaked in fresh water. Be sure to wipe off the water with a soft dry cloth in such cases.
- Do not open or close the card/battery door and terminal cover with droplets of water still on the camera. The water droplets may seep into the camera, causing condensation or failure.

Note

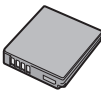
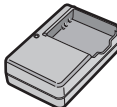







- Wipe off the water and dirt on the camera with a dry soft cloth.
- Do not leave the camera uncared for more than 60 minutes after using it underwater. It may cause deterioration of the waterproof performance.
- After use at the seaside or under water, make sure that the card/battery door and terminal cover are firmly closed and soak the unit in fresh water in a shallow container for 10 minutes or less.
- If the zoom lever, mode dial, or camera [OFF/ON] button do not move smoothly, it may be caused by an adhesion of foreign objects. Using the camera in such a state may cause malfunctions, such as locking up, so wash off any foreign objects by soaking the camera in fresh water. Confirm that the zoom lever, mode dial, and camera [OFF/ON] button move smoothly after cleaning.
- After soaking or washing the unit, wipe off water drops with a dry soft cloth and dry the unit in a shaded area which is well ventilated.
- Make sure that water is completely drained from the unit after soaking in water by standing the unit on a dry cloth for a while.
- Do not dry the camera with hot air from a dryer or similar. Waterproof performance will deteriorate due to possible deformation.
- Do not use chemicals such as benzine, thinner, alcohol, cleanser, or soap or detergents.

Standard Accessories

Check that all the accessories are included before using the camera.
Product numbers correct as of January 2010. These may be subject to change.

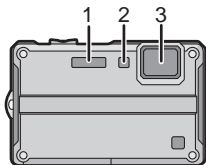
- 1 Battery Pack
(Indicated as **battery pack** or **battery** in the text)
Charge the battery before use.
- 2 Battery Charger
(Indicated as **battery charger** or **charger** in the text)
- 3 USB Connection Cable
- 4 AV Cable
- 5 CD-ROM
 - Software:
Use it to install the software to your PC.
 - Operating Instructions
- 6 Brush
- 7 Silicon Jacket
- 8 Hand Strap
- 9 Battery Case

- Supplied accessories are not waterproof (excluding hand strap/silicon jacket).
- Keep the Brush out of reach of children to prevent swallowing.
- The charger is stored inside the silicon jacket.
- SD Memory Card, SDHC Memory Card and SDXC Memory Card are indicated as **card** in the text.
- **The card is optional.**
You can record or play back pictures on the built-in memory when you are not using a card.
- For information about optional accessories, refer to the "Digital Camera Accessory System".
- If any accessories are lost, customers should contact Panasonic's parts department at 1 800 833-9626 for further information about obtaining replacement parts.

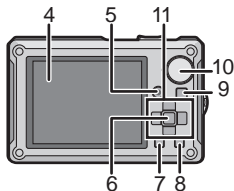
<p>1</p>  <p>DMW-BCF10PP</p>	<p>2</p>  <p>DE-A59B</p>
<p>3</p>  <p>K1HA14AD0003</p>	<p>4</p>  <p>K1HA14CD0004</p>
<p>5</p>  <p>VFF0593</p>	<p>6</p>  <p>VFC4364/ VFC4537</p>
<p>7</p>  <p>VMG1932</p>	<p>8</p>  <p>VFC4393</p>
<p>9</p>  <p>VGQ0D56</p>	

Names of the Components

- 1 Flash
- 2 Self-timer indicator/
AF Assist Lamp/LED light
- 3 Lens

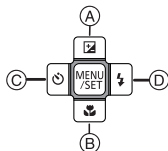


- 4 LCD monitor
- 5 Motion picture button
- 6 [MENU/SET] button
- 7 [DISPLAY] button
- 8 [Q.MENU]/Delete button
- 9 Playback button
- 10 Mode dial

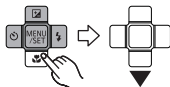


11 Cursor buttons

- (A): ▲/Exposure Compensation/Auto Bracket/White Balance fine adjustment
- (B): ▼/Macro Mode/AF Tracking
- (C): ◀/Self-timer button
- (D): ▶/Flash setting button



In these Operating Instructions, the cursor buttons are described as shown in the figure below or described with ▲/▼/◀/▶.
e.g.: When you press the ▼ (down) button

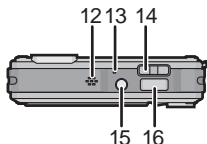


or

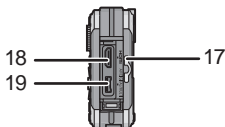
Press ▼

- 12 Speaker
- 13 Microphone
- 14 Zoom lever

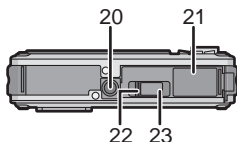
e.g.: To make subjects appear closer use (Tele)
Place your finger on the zoom lever, and press [T]



- 15 Camera [OFF/ON] button
- 16 Shutter button
- 17 Hand strap eyelet
 - Be sure to attach the hand strap when using the camera to ensure that you will not drop it.
- 18 [HDMI] socket
- 19 [AV/DIGITAL/MULTI] socket
 - When using an AC adaptor, ensure that the Panasonic multi conversion adaptor (DMW-MCA1; optional) and AC adaptor (DMW-AC5PP; optional) are used.



- 20 Tripod receptacle
 - When you use a tripod, make sure the tripod is stable when the camera is attached to it.
- 21 Card/Battery door
- 22 Release lever
- 23 [LOCK] switch



Charging the Battery

■ About batteries that you can use with this unit

The battery that can be used with this unit is DMW-BCF10PP.

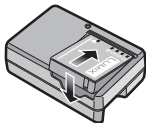
It has been found that counterfeit battery packs which look very similar to the genuine product are made available to purchase in some markets. Some of these battery packs are not adequately protected with internal protection to meet the requirements of appropriate safety standards. There is a possibility that these battery packs may lead to fire or explosion. Please be advised that we are not liable for any accident or failure occurring as a result of use of a counterfeit battery pack. To ensure that safe products are used we would recommend that a genuine Panasonic battery pack is used.

- Use the dedicated charger and battery.
- The camera has a function for distinguishing batteries which can be used safely. The dedicated battery (DMW-BCF10PP) supports this function. The only batteries suitable for use with this unit are genuine Panasonic products and batteries manufactured by other companies and certified by Panasonic. (Batteries which do not support this function cannot be used). Panasonic cannot in any way guarantee the quality, performance or safety of batteries which have been manufactured by other companies and are not genuine Panasonic products.

■ Charging

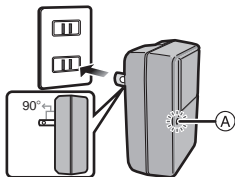
- The battery is not charged when the camera is shipped. Charge the battery before use.
- Charge the battery with the charger indoors.
- It is recommended to charge the battery in a temperature between 10 °C to 35 °C (50 °F to 95 °F). (The battery temperature should also be the same.)

- 1 Attach the battery paying attention to the direction of the battery.**



- 2 Connect the charger to the electrical outlet.**

- Disconnect the charger from the electrical socket and detach the battery after charging is completed.



■ About the [CHARGE] indicator

The [CHARGE]

indicator turns on: The [CHARGE] indicator ① is turned on and charging will start.

The [CHARGE]

indicator turns off: The [CHARGE] indicator ① of the charger will turn off once the charging has completed without any problem.

● When the [CHARGE] indicator flashes

- The battery temperature is too high or too low. It is recommended to charge the battery again in an ambient temperature of between 10 °C to 35 °C (50 °F to 95 °F).
- The terminals of the charger or the battery are dirty. In this case, wipe off the dirt with a dry cloth.

■ Charging time

Charging time	Approx. 130 min
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■ Approximate operating time and number of recordable pictures

Number of recordable pictures	Approx. 360 pictures
Recording time	Approx. 180 min
Playback time	Approx. 300 min

Recording conditions by CIPA standard

- CIPA is an abbreviation of [Camera & Imaging Products Association].
- Normal Picture Mode
- Temperature: 23 °C (73.4 °F)/Humidity: 50% when LCD monitor is on.
- Using a Panasonic SD Memory Card (32 MB).
- Using the supplied battery.
- Starting recording 30 seconds after the camera is turned on. (When the Optical Image Stabilizer function is set to [AUTO].)
- **Recording once every 30 seconds** with full flash every second recording.
- Changing the zoom magnification from Tele to Wide or vice versa in every recording.
- Turning the camera off every 10 recordings and leaving it until the temperature of the battery decreases.

About the Built-in Memory/the Card

Built-in Memory

- **Memory size: Approx. 40 MB**

- The built-in memory can be used as a temporary storage device when the card being used becomes full.
- The access time for the built-in memory may be longer than the access time for a card.

Card

The following cards which conform to the SD video standard can be used with this unit.

(These cards are indicated as **card** in the text.)

Type of card which can be used with this unit	Remarks
SD Memory Card (8 MB to 2 GB)	<ul style="list-style-type: none">• SDHC Memory Cards and SDXC Memory Cards can be used only in equipment that is compatible with their respective formats.• Check that the PC and other equipment are compatible when using the SDXC Memory Cards. http://panasonic.net/avc/sdcard/information/SDXC.html
SDHC Memory Card (4 GB to 32 GB)	
SDXC Memory Card (48 GB to 64 GB)	

- Only cards bearing the SDHC logo (indicating that the card conforms to SD video standards) may be used as 4 GB to 32 GB cards.
- Only cards bearing the SDXC logo (indicating that the card conforms to SD video standards) may be used as 48 GB to 64 GB cards.
- Use a card with SD Speed Class* with "Class 4" or higher when recording motion pictures in [AVCHD Lite]. Also, use a card with SD Speed Class with "Class 6" or higher when recording motion pictures in [MOTION JPEG].
 - * SD Speed Class is the speed standard regarding continuous writing.
- Please confirm the latest information on the following website.
<http://panasonic.jp/support/global/cs/dsc/>
(This Site is English only.)



Note

- Keep the Memory Card out of reach of children to prevent swallowing.

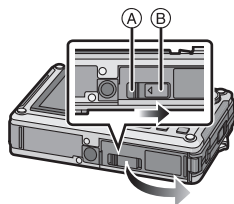
Inserting and Removing the Card (optional)/the Battery

- Check that this unit is turned off.
- **Confirm that there is no foreign object.**
- We recommend using a Panasonic card.

1 ①: Slide the [LOCK] switch ②, and release the lock.

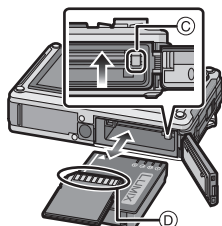
②: Slide the release lever ③ and open the card/battery door.

- Always use genuine Panasonic batteries (DMW-BCF10PP).
- If you use other batteries, we cannot guarantee the quality of this product.



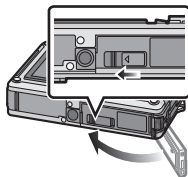
2 Battery: Insert until it is locked by the lever ④ being careful about the direction you insert it. Pull the lever ④ in the direction of the arrow to remove the battery.

Card: Push it fully until it clicks being careful about the direction you insert it. To remove the card, push the card until it clicks, then pull the card out upright.



- ④: Do not touch the connection terminals of the card.
- The card may be damaged if it is not fully inserted.

3 Close the card/battery door until it clicks, and then lock the [LOCK] switch by sliding it toward [◀].

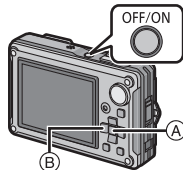


Setting Date/Time (Clock Set)

- The clock is not set when the camera is shipped.

1 Press the [OFF/ON] button.

- (A) [MENU/SET] button
- (B) Cursor buttons



- [PRECAUTIONS] is displayed. **Be sure to check this so that you can maintain the waterproof performance.** (P9)

2 Press [MENU/SET].

3 Press ◀/▶ to select the items (year, month, day, hour, minute, display sequence or time display format), and press ▲/▼ to set.

- 🗑️: Cancel without setting the clock.



4 Press [MENU/SET] to set.

5 Press [MENU/SET].

- Press 🗑️ to return to the settings screen.

Changing the Clock setting

Select [CLOCK SET] in the [REC] or [SETUP] menu, and press ▶.

- It can be changed in steps 3, 4 and 5 to set the clock.

Setting the Menu

This section describes how to select the Normal Picture Mode settings, and the same setting can be used for the [PLAYBACK] menu and [SETUP] menu as well.

Example: Setting [AF MODE] from [□] to [👤] in the Normal Picture Mode

1 Press [MENU/SET] to display the menu.



2 Press ▲/▼ to select [AF MODE], and then press ►.

- Depending on the item, its setting may not appear or it may be displayed in a different way.



3 Press ▲/▼ to select [👤] and then press [MENU/SET] to set.



4 Press [MENU/SET] to close the menu.

Switching to other menus

e.g.: Switching to the [SETUP] menu

1 Press [MENU/SET] to display the menu.

2 Press ◀.

3 Press ▼ to select the [SETUP] menu icon [🔧].

4 Press ►.

- Select a menu item next and set it.

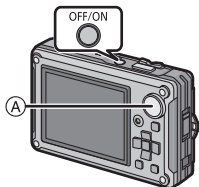


Selecting the [REC] Mode

1 Press the [OFF/ON] button.

2 Switch the Mode by rotating the mode dial.

(A) Mode dial



■ List of [REC] Modes

Intelligent Auto Mode

The subjects are recorded using settings automatically selected by the camera.

Normal Picture Mode

The subjects are recorded using your own settings.

Sports Mode

Use this mode to take pictures of sporting events, etc.

Snow Mode

This allows you to take pictures that show the snow as white as possible at a ski resort or a snow-covered mountain.

Beach & Surf Mode

This mode is optimal for taking pictures up to 3 m (10 feet) underwater and at the beach.

Scene Mode

This allows you to take pictures that match the scene being recorded.

Clipboard Mode

Record as a memo.

Taking Pictures Using the Automatic Function

(**iA**): Intelligent Auto Mode)

The camera will set the most appropriate settings to match the subject and the recording conditions so we recommend this mode for beginners or those who want to leave the settings to the camera and take pictures easily.

1 Set the mode dial to [**iA**].

2 Press the shutter button halfway to focus.

- The focus indication ① (green) lights when the subject is focused.
- The AF area ② is displayed around the subject's face by the Face Detection function. In other cases, it is displayed at the point on the subject which is in focus.
- The focus range is 5 cm (0.17 feet) (Wide)/ 30 cm (0.99 feet) (Tele) to ∞ .



3 Press the shutter button fully (push it in further), and take the picture.

Scene Detection

When the camera identifies the optimum scene, the icon of the scene concerned is displayed in blue for 2 seconds, after which its color changes to the usual red.

iA →

	[i-PORTRAIT]
	[i-SCENERY]
	[i-MACRO]
	[i-NIGHT PORTRAIT]
	[i-NIGHT SCENERY]
	[i-SUNSET]
	[i-BABY]

• Only when [iA] is selected

- [iA] is set if none of the scenes are applicable, and the standard settings are set.
- When [iA], [i-Portrait] or [i-Night Portrait] is selected, the camera automatically detects a person's face, and it will adjust the focus and exposure. **(Face Detection)**

AF Tracking Function

It is possible to set the focus to the specified subject. Focus will keep following the subject automatically even if it moves.

1 Press ▲.

- [AF-ON] is displayed in the upper left of the screen.
- AF Tracking frame is displayed in the center of the screen.
- Press ▲ again to cancel.



2 Bring the subject to the AF Tracking frame, and press ▼ to lock the subject.

- AF Tracking frame will turn yellow.
- An optimum scene for the specified subject will be chosen.
- Press ▲ to cancel.

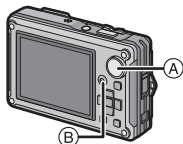


Recording Motion Picture

This mode can record high definition motion pictures compatible with the AVCHD format or motion pictures recorded in Motion JPEG. Audio will be recorded in monaural.

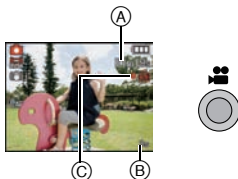
1 Select the Mode.

- (A) Mode dial
- (B) Motion picture button



2 Start recording by pressing the motion picture button.

- (A) Available recording time
- (B) Elapsed recording time
- Release the motion picture button right after you press it.
- The recording state indicator (red) (C) will flash while recording motion pictures.



3 Stop the recording by pressing the motion picture button again.

- If the built-in memory or the card becomes full in the middle of recording, the camera stops recording automatically.


Note


- Motion picture recorded continuously in [MOTION JPEG] is up to 2 GB. Only the maximum recordable time for 2 GB is displayed on the screen.
- Maximum time to record motion pictures continuously with [AVCHD Lite] is 13 hours 3 minutes 20 seconds. Screen will only display up to 13 hours 3 minutes 20 seconds. However, the recording may stop before that depending on the remaining battery level.

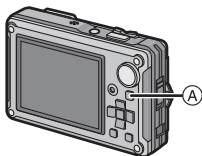
[PLAYBACK] Mode: 

Playing Back Pictures ([NORMAL PLAY])


1 Press .

(A)  button

- Normal Playback is displayed automatically when the power is turned on by pressing and holding the  button.



2 Press to select the picture.

- After selecting the motion picture, press  to start playback.



[PLAYBACK] Mode: 

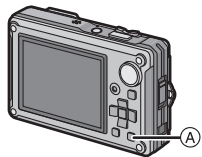
Deleting Pictures

Once deleted, pictures cannot be recovered.

- Pictures on the built-in memory or the card, that are being played back will be deleted.

1 Select the picture to be deleted, and then press .

(A)  button



2 Press to select [YES] and then press .



Reading the Operating Instructions (PDF format)

- You have practised the basic operations introduced in these operating instructions and want to progress to advanced operations.
- You want to check the Troubleshooting.

In these kinds of situations refer to Operating Instructions (PDF format) recorded on the CD-ROM containing the Operating Instructions (supplied).

■ For Windows

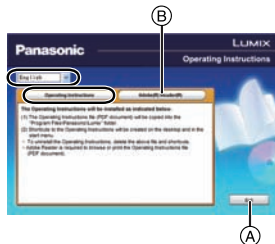
1 Turn the PC on and insert the CD-ROM containing the Operating Instructions (supplied).

2 Click the [Operating Instructions].

3 Select the desired language and then click [Operating Instructions] to install.


(A) To return to the install menu.

4 Double click the “Operating Instructions” shortcut icon on the desktop.



■ When the Operating Instructions (PDF format) will not open

You will need Adobe Acrobat Reader 5.0 or later or Adobe Reader 7.0 or later to browse or print the Operating Instructions (PDF format).

Insert the CD-ROM containing the Operating Instructions (supplied), click  and then follow the messages on the screen to install.

(Compatible OS: Windows 2000 SP4/Windows XP SP2 or SP3/Windows Vista SP1 or SP2/Windows 7)

- You can download and install a version of Adobe Reader that you can use with your OS from the following Web Site.

<http://get.adobe.com/reader/otherversions>

■ To uninstall the Operating Instructions (PDF format)

Delete the PDF file from the "Program Files\Panasonic\Lumix\" folder.

- When the contents in the Program Files folder cannot be displayed, click the [Show the contents of this folder] to display them.

■ For Macintosh

- 1** Turn the PC on and insert the CD-ROM containing the Operating Instructions (supplied).
- 2** Open the "Manual" folder in the CD-ROM and then copy the PDF file with the desired language inside the folder.
- 3** Double click the PDF file to open it.

Specifications

Digital Camera: Information for your safety

Power Source:	DC 5.1 V
Power Consumption:	1.2 W (When recording) 0.7 W (When playing back)

Camera effective pixels: 14,100,000 pixels

Image sensor: 1/2.33" CCD, total pixel number 14,500,000 pixels, Primary color filter

Lens: Optical 4.6× zoom, f=4.9 mm to 22.8 mm (35 mm film camera equivalent: 28 mm to 128 mm)/F3.3 to F5.9

Digital Zoom: Max. 4×

Extended Optical Zoom: Max. 9.8×

Focus range: Normal: 30 cm (0.99 feet) to ∞
Macro/Intelligent Auto/Clipboard Mode: 5 cm (0.17 feet) (Wide)/30 cm (0.99 feet) (Tele) to ∞
Scene Mode: There may be differences in the above settings.

Shutter system: Electronic shutter+Mechanical shutter

Burst Recording

Burst speed: Approx. 1.8 pictures/second

Number of recordable pictures: Max. 5 pictures (Standard), max. 3 pictures (Fine).

Hi-speed Burst**Burst speed:**

Approx. 10 pictures/second (Speed priority)
Approx. 5 pictures/second (Image priority)
(3M (4:3), 2.5M (3:2) or 2M (16:9) is selected as the picture size.)

Number of recordable pictures:

When using the built-in memory:
Approx. 15 pictures (immediately after formatting)
When using a Card: Max. 100 pictures (differs depending on the type of Card and the recording conditions)

Shutter speed:

8 seconds to 1/1300th of a second
[STARRY SKY] Mode: 15 seconds, 30 seconds, 60 seconds

Exposure (AE):

Program AE
Exposure compensation (1/3 EV Step, -2 EV to +2 EV)

Metering Mode:

Multiple

LCD monitor:

2.7" TFT LCD
(Approx. 230,000 dots) (field of view ratio about 100%)

Flash:

Flash range: [ISO AUTO]
Approx. 30 cm (0.99 feet) to 5.1 m (16.7 feet) (Wide)

Microphone:

Monaural

Speaker:

Monaural

Recording media:

Built-in Memory (Approx. 40 MB)/SD Memory Card/
SDHC Memory Card/SDXC Memory Card

Recording File Format**Still Picture:**

JPEG (based on "Design rule for Camera File system", based on "Exif 2.21" standard)/DPOF corresponding

Pictures with audio:

JPEG (based on "Design rule for Camera File system", based on "Exif 2.21" standard)+ "QuickTime"

Motion pictures with audio:

AVCHD Lite/QuickTime Motion JPEG

Interface

Digital: "USB 2.0" (High Speed)

Analog video/audio: NTSC

Audio line output (monaural)

Terminal

[AV/DIGITAL/

MULTI]:

Dedicated jack (14 pin)

[HDMI]:

MiniHDMI TypeC

Dimensions:

Approx. 99.3 mm (W)×63.1 mm (H)×24.3 mm (D)
[3.91" (W)×2.48"(H)×0.96" (D)]
(excluding the projecting parts)

Mass (weight):

Approx. 188 g/0.41 lb (with card and battery)

Approx. 167 g/0.37 lb (excluding card and battery)

Operating

temperature:

−10 °C* to 40 °C (24 °F* to 104 °F)

* The performance of the battery (number of recordable pictures/operating time) may decrease temporarily when using the camera in a temperature between −10 °C to 0 °C (24 °F to 32 °F) (at the cold climate such as ski resorts).

Operating humidity: 10% to 80%

Language select: [ENGLISH]/[ESPAÑOL]

Waterproof

performance:

Equivalent to IEC 60529 "IPX8".

(Usable for 60 minutes in 10 m (33 feet) water depth)

Crash resistance

performance:

The camera has cleared a single unit drop test from a height of 2 m (6.6 feet) onto 3 cm (0.10 feet) plywood, which is compliant with "MIL-STD 810F Method 516.5-Shock".

Dustproof

performance:

Equivalent to IEC 60529 "IP6X".

Battery Charger

(Panasonic
DE-A59B):

Information for your safety

Input:	110 V to 240 V ~ 50/60 Hz, 0.2 A
Output:	4.2 V === 0.65 A (Battery charging)
Operating temperature:	0 °C* to 40 °C (32 °F* to 104 °F) * The battery cannot be recharged in a temperature less than 0 °C (32 °F). (The [CHARGE] indicator blinks when the battery cannot be recharged.)

Equipment mobility: Movable








Battery Pack (lithium-ion)

(Panasonic
DMW-BCF10PP):

Information for your safety

Voltage/capacity:	3.6 V/940 mAh
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Digital Camera Accessory System

Accessory#	Illustration	Description
DMW-BCF10PP		Battery Pack
DMW-AC5PP		AC Adaptor*
DMW-MCA1		Multi conversion adaptor*
RP-CDHM15 RP-CDHM30		HDMI mini Cable
DMW-CHTZ3		Semi Hard Case
DMW-MCFT2		Marine Case
RP-SDW64GU1K RP-SDW48GU1K RP-SDW32GU1K RP-SDW16GU1K RP-SDW08GU1K RP-SDW04GU1K		Class 10 64 GB SDXC Memory Card Class 10 48 GB SDXC Memory Card Class 10 32 GB SDHC Memory Card Class 10 16 GB SDHC Memory Card Class 10 8 GB SDHC Memory Card Class 10 4 GB SDHC Memory Card
RP-SDP16GU1K RP-SDP08GU1K RP-SDP04GU1K RP-SDP02GU1K		Class 4 16 GB SDHC Memory Card Class 4 8 GB SDHC Memory Card Class 4 4 GB SDHC Memory Card Class 4 2 GB SD Memory Card
RP-SDR08GU1A RP-SDR04GU1A RP-SDR02GU1A		Class 2 8 GB SDHC Memory Card Class 2 4 GB SDHC Memory Card Class 2 2 GB SD Memory Card

Product numbers correct as of January 2010. These may be subject to change.

* The AC Adaptor (DMW-AC5PP; optional) can only be used with the designated Panasonic multi conversion adaptor (DMW-MCA1; optional).

• NOTE: Accessories and/or model numbers may vary between countries. Consult your local dealer.

Digital Camera Accessory Order Form

Please photocopy this form when placing an order.

1. Digital Camera Model # _____

2. Items Ordered

Accessory #	Description	Price Each	Quantity	Total Price
Subtotal				
Your State & Local Sales Tax				
Shipping & Handling				6.95
Total Enclosed				

3. Method of payment (check one)

- ☐ Check of Money Order enclosed (NO C.O.D.SHIPMENTS)
- ☐ VISA Credit Card # _____
- ☐ MasterCard Expiration Date _____
- ☐ Discover Customer Signature _____

Make Check or Money Order to: PANASONIC ACCESSORIES

(Please do not send cash)

4. Shipping information (UPS delivery requires complete street address)

Ship To:

Mr.

Mrs.

Ms.

First _____ Last _____

Phone#:

Day () _____

Street Address _____

Night () _____

City _____ State _____ Zip _____

TO OBTAIN ANY OF OUR DIGITAL CAMERA ACCESSORIES YOU CAN DO ANY OF THE FOLLOWING:

VISIT YOUR LOCAL PANASONIC DEALER

OR

CALL PANASONIC'S ACCESSORY ORDER LINE AT 1-800-332-5368

[6 AM-6 PM M-F, PACIFIC TIME]

OR

MAIL THIS ORDER TO: PANASONIC SERVICE AND TECHNOLOGY COMPANY

ACCESSORY ORDER OFFICE

20421 84th Avenue South Kent, WA. 98032

Limited Warranty (ONLY FOR U.S.A. AND PUERTO RICO)

**Panasonic Consumer Electronics Company,
Division of Panasonic Corporation of North America**
One Panasonic Way, Secaucus, New Jersey 07094

Panasonic Digital Still Camera Products Limited Warranty

Limited Warranty Coverage (For USA and Puerto Rico Only)

If your product does not work properly because of a defect in materials or workmanship, Panasonic Consumer Electronics Company (referred to as “the warrantor”) will, for the length of the period indicated on the chart below, which starts with the date of original purchase (“warranty period”), at its option either (a) repair your product with new or refurbished parts, (b) replace it with a new or a refurbished equivalent value product, or (c) refund your purchase price. The decision to repair, replace or refund will be made by the warrantor.

Product or Part Name	Parts	Labor
Digital Still Camera	1 year	1 year
CCD	6 months	90 days
SD Memory Cards, Rechargeable Battery Pack (defective exchange)	90 days	Not Applicable

During the “Labor” warranty period there will be no charge for labor. During the “Parts” warranty period, there will be no charge for parts. This Limited Warranty excludes both parts and labor for non-rechargeable batteries, antennas, and cosmetic parts (cabinet). This warranty only applies to products purchased and serviced in the United States or Puerto Rico. This warranty is extended only to the original purchaser of a new product which was not sold “as is”.

Mail-In Service

For assistance in the U.S.A. and Puerto Rico in obtaining repairs, please ship the product prepaid to:

Panasonic Exchange Center

4900 George McVay Drive

Suite B

McAllen, TX 78503

panacare@us.panasonic.com

When shipping the unit, carefully pack, include all accessories, and send it prepaid, adequately insured and preferably in the original carton. If Lithium Ion batteries are shipped by air the package must be labeled "Contains Lithium Ion Battery (No lithium metal)". Damaged batteries are prohibited from shipment by US Mail. Batteries must be securely packed in a manner to prevent short-circuiting and a package cannot contain more than 3 Lithium Ion batteries. Include a letter detailing the complaint, a return address and provide a daytime phone number where you can be reached. A valid registered receipt is required under the Limited Warranty.

IF REPAIR IS NEEDED DURING THE WARRANTY PERIOD, THE PURCHASER WILL BE REQUIRED TO FURNISH A SALES RECEIPT/PROOF OF PURCHASE INDICATING DATE OF PURCHASE, AMOUNT PAID AND PLACE OF PURCHASE. CUSTOMER WILL BE CHARGED FOR THE REPAIR OF ANY UNIT RECEIVED WITHOUT SUCH PROOF OF PURCHASE.

Limited Warranty Limits And Exclusions

This warranty ONLY COVERS failures due to defects in materials or workmanship, and DOES NOT COVER normal wear and tear or cosmetic damage. The warranty ALSO DOES NOT COVER damages which occurred in shipment, or failures which are caused by products not supplied by the warrantor, or failures which result from accidents, misuse, abuse, neglect, mishandling, misapplication, alteration, faulty installation, set-up adjustments, misadjustment of consumer controls, improper maintenance, power line surge, lightning damage, modification, introduction of sand, humidity or liquids, commercial use such as hotel, office, restaurant, or other business or rental use of the product, or service by anyone other than a Factory Service Center or other Authorized Servicer, or damage that is attributable to acts of God.

THERE ARE NO EXPRESS WARRANTIES EXCEPT AS LISTED UNDER “LIMITED WARRANTY COVERAGE”.

THE WARRANTOR IS NOT LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THIS PRODUCT, OR ARISING OUT OF ANY BREACH OF THIS WARRANTY.

(As examples, this excludes damages for lost time, travel to and from the servicer, loss of or damage to media or images, data or other memory or recorded content. The items listed are not exclusive, but for illustration only.)

ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTY OF MERCHANTABILITY, ARE LIMITED TO THE PERIOD OF THE LIMITED WARRANTY.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the exclusions may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state. If a problem with this product develops during or after the warranty period, you may contact your dealer or Service Center. If the problem is not handled to your satisfaction, then write to the warrantor's Consumer Affairs Department at the addresses listed for the warrantor.

PARTS AND SERVICE, WHICH ARE NOT COVERED BY THIS LIMITED WARRANTY, ARE YOUR RESPONSIBILITY.

Customer Services Directory (United States and Puerto Rico)

Obtain Product Information and Operating Assistance; locate your nearest Dealer or Service Center; purchase Parts and Accessories; or make Customer Service and Literature requests by visiting our Web Site at:

<http://www.panasonic.com/help>

or, contact us via the web at:

<http://www.panasonic.com/contactinfo>

You may also contact us directly at:

1-800-211-PANA (7262)

Monday-Friday 9am-9pm, Saturday-Sunday 10am-7pm EST

For hearing or speech impaired TTY users, TTY: 1-877-833-8855

Accessory Purchases (United States and Puerto Rico)

Purchase Parts, Accessories and Instruction Books online for all Panasonic Products by visiting our Web Site at:

<http://www.pstc.panasonic.com>

Or, send your request by E-mail to:

npcparts@us.panasonic.com

You may also contact us directly at:

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(Monday-Friday 9am-9pm EST)

Panasonic Service and Technology Company

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